CLAIMS

This Listing of Claims will replace all prior versions and listings of claims in this application.

Listing of Claims:

1. (Currently amended) A demodulator to demodulate frequency-modulated signals including a phase locked loop including at least a phase detector, a loop filter and a voltage controlled oscillator function VCO, characterized in that said voltage controlled oscillator function VCO has a modifiable gain, wherein the gain of said voltage controlled oscillator function VCO is modifiable using a programmable transconductance, and wherein the programmable transconductance includes a fixed transconductance, a current multiplier, the output of said programmable transconductance being the output of a summation unit that sums a combination of at least one output of said multiplier.

2. (Cancelled).

3. . (Cancelled).

4. (Currently amended) A demodulator as claimed in claim ~~3~~1, wherein said second current is taken from an intermediate output of said current multiplier using digitally programmable switches.

5. (Original) A demodulator as claimed in claim 4, wherein said switches are MOS switches.

6. (Currently amended) An electronic device able to receive frequency-modulated signals characterized in that demodulation of said signals is realized by a demodulator as claimed in one of the claims ~~1 to 5~~ 1 or 4 or 5.

7. (Currently amended) A method for demodulating frequency-modulated signals including the steps of:

applying said frequency-modulated signals at the input of a phase locked loop including at least a phase detector, a loop filter and a voltage controlled oscillator function VCO,

wherein the gain of said VCO is modifiable using a programmable transconductance, and wherein the programmable transconductance includes a fixed transconductance, a current multiplier, the output of said programmable transconductance being the output of a summation unit that sums a combination of at least one output of said multiplier, increasing frequency variations by increasing gain of the voltage controlled oscillator function VCO having a modifiable gain, producing demodulated signals at the output of said the phase locked loop.